# 6550

## Beam Power Tube

### GENERAL DATA

**Electrical:**

Heater Characteristics and Ratings *(Design-Center Values):*

| | | |
|---|---|---|
| Voltage (AC or DC) | 6.3 ± 0.6 | volts |
| Current at heater volts = 6.3 | 1.600 | amp |
| Peak heater-cathode voltage: | | |
| Heater negative with respect to cathode | 300[a] max. | volts |
| Heater positive with respect to cathode | 200[b] max. | volts |
| Direct Interelectrode Capacitances (Approx.):[c] | | |
| Grid No.1 to plate | 0.85 | μμf |
| Grid No.1 to cathode & grid No.3, grid No.2, base sleeve, and heater | 14.0 | μμf |
| Plate to cathode & grid No.3, grid No.2, base sleeve, and heater | 12.0 | μμf |

**Characteristics, Class $A_1$ Amplifier:**

| | *Triode Connection*[d] | | | |
|---|---|---|---|---|
| Plate Voltage | 250 | 450 | 400 | volts |
| Grid-No.2 Voltage | 250 | 450 | 225 | volts |
| Grid-No.1 Voltage | -14 | -46 | -16.5 | volts |
| Amplification Factor | 8 | 7.5 | - | |
| Plate Resistance (Approx.) | 12000 | - | 27000 | ohms |
| Transconductance | 11000 | - | 9000 | μmhos |
| Plate Current | 140 | 150 | 87 | ma |
| Grid-No.2 Current | 12 | - | 4 | ma |
| Grid-No.1 Voltage (Approx.) for plate ma. = 1 | -40 | - | -35 | volts |

**Mechanical:**

Operating Position . . . . . . . . . . . . . . . . . . . . . . . Any
Type of Cathode . . . . . . . . . . . . . . . . Coated Unipotential
Maximum Overall Length . . . . . . . . . . . . . . . . . . 4-3/4"
Maximum Seated Length . . . . . . . . . . . . . . . . . . 4-3/16"
Maximum Diameter . . . . . . . . . . . . . . . . . . . . 2-1/16"
Bulb . . . . . . . . . . . . . . . . . . . . . . . . . . . . ST16
Base . . . Large-Wafer Octal 8-Pin with Sleeve (JEDEC Group 1, No.B8-86)
Basing Designation for BOTTOM VIEW . . . . . . . . . . . . 7S

Pin 1 - Base Sleeve
Pin 2 - Heater
Pin 3 - Plate
Pin 4 - Grid No.2
Pin 5 - Grid No.1
Pin 6 - No Internal Connection
Pin 7 - Heater
Pin 8 - Cathode, Grid No.3

## AF POWER AMPLIFIER — Class $A_1$

**Maximum Ratings,** *Design-Center Values:*

| | | |
|---|---|---|
| PLATE VOLTAGE | 600 max. | volts |
| GRID-No.2 (SCREEN-GRID) VOLTAGE | 400 max. | volts |
| GRID-No.1 (CONTROL-GRID) VOLTAGE: | | |
| Negative-bias value | 300 max. | volts |
| Positive-bias value | 0 max. | volts |
| CATHODE CURRENT | 175 max. | ma |
| GRID-No.2 INPUT | 6 max. | watts |
| PLATE DISSIPATION | 35 max. | watts |
| BULB TEMPERATURE (At hottest point on bulb surface) | 250 max. | °C |

**Typical Operation and Characteristics:**

| | | | |
|---|---|---|---|
| Plate Voltage | 250 | 400 | volts |
| Grid-No.2 Voltage | 250 | 225 | volts |
| Grid-No.1 Voltage | -14 | -16.5 | volts |
| Peak AF Grid-No.1 Voltage | 14 | 16.5 | volts |
| Zero-Signal Plate Current | 140 | 87 | ma |
| Max.-Signal Plate Current | 150 | 105 | ma |
| Zero-Signal Grid-No.2 Current | 12 | 4 | ma |
| Max.-Signal Grid-No.2 Current | 28 | 18 | ma |
| Plate Resistance (Approx.) | 12000 | 27000 | ohms |
| Transconductance | 11000 | 9000 | μmhos |
| Load Resistance | 1500 | 3000 | ohms |
| Total Harmonic Distortion | 7 | 13.5 | % |
| Max.-Signal Power Output | 12.5 | 20 | watts |

**Maximum Circuit Values:**

| | | |
|---|---|---|
| Grid-No.1-Circuit Resistance: | | |
| For fixed-bias operation | 0.05 max. | megohm |
| For cathode-bias operation | 0.25 max. | megohm |

## PUSH-PULL AF POWER AMPLIFIER — Class $A_1$

**Maximum Ratings,** *Design-Center Values:*

*Same as for AF POWER AMPLIFIER — Class $A_1$*

**Typical Operation and Characteristics:**

*Values are for 2 tubes*

| | *Fixed Bias* | | *Cathode Bias* | |
|---|---|---|---|---|
| Plate Supply Voltage | 400 | 600 | 400 | volts |
| Grid-No.2 Supply Voltage | 275 | 300 | 300 | volts |
| Grid-No.1 Voltage | -23 | -31 | - | volts |
| Cathode Resistor | - | - | 140 | ohms |
| Peak AF Grid-No.1-to-Grid-No.1 Voltage | 46 | 62 | 53 | volts |
| Zero-Signal Plate Current | 180 | 115 | 166 | ma |
| Max.-Signal Plate Current | 270 | 273 | 190 | ma |
| Zero-Signal Grid-No.2 Current | 9 | 4 | 7.5 | ma |
| Max.-Signal Grid-No.2 Current | 44 | 41 | 39 | ma |
| Effective Load Resistance (Plate to plate) | 3500 | 5000 | 4500 | ohms |

| | | | | |
|---|---|---|---|---|
| Total Harmonic Distortion | 3 | 2.5 | 4 | % |
| Max.-Signal Power Output | 55 | 100 | 41 | watts |

**Maximum Circuit Values:**

| | | |
|---|---|---|
| Grid-No.1-Circuit Resistance: | | |
| For fixed-bias operation | 0.05 max. | megohm |
| For cathode-bias operation | 0.25 max. | megohm |

## PUSH-PULL AF POWER AMPLIFIER — Class A1

*Triode Connection*[d]

**Maximum Ratings,** *Design-Center Values:*

| | | |
|---|---|---|
| PLATE VOLTAGE | 495 max. | volts |
| GRID-No.2 (SCREEN-GRID) VOLTAGE | 440 max. | volts |
| GRID-No.1 (CONTROL-GRID) VOLTAGE: | | |
| Negative-bias value | 330 max. | volts |
| Positive-bias value | 0 max. | volts |
| CATHODE CURRENT | 192.5 max. | ma |
| GRID-No.2 INPUT | 6.6 max. | watts |
| PLATE DISSIPATION | 44 max. | watts |
| BULB TEMPERATURE (At hottest point on bulb surface) | 250 max. | °C |

**Typical Operation and Characteristics:**

*Values are for 2 tubes*

| | | |
|---|---|---|
| Plate Voltage | 450 | volts |
| Grid No.1 Voltage | -46 | volts |
| Peak AF Grid-No.1-to-Grid-No.1-Voltage | 92 | volts |
| Zero-Signal Plate Current | 150 | ma |
| Max.-Signal Plate Current | 220 | ma |
| Effective Load Resistance (Plate to plate) | 4000 | ohms |
| Total Harmonic Distortion | 2.5 | % |
| Max.-Signal Power Output | 28 | watts |

**Maximum Circuit Values:**

| | | |
|---|---|---|
| Grid-No.1-Circuit Resistance: | | |
| For fixed-bias operation | 0.05 max. | megohm |
| For cathode-bias operation | 0.25 max. | megohm |

[a] The dc component must not exceed 300 volts.
[b] The dc component must not exceed 100 volts
[c] Without external shield.
[d] Grid No.2 connected to plate.